CS101 Project Documentation

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Chapter 1

Preface

This website/book is intended to host a documentation for our Brandeis COSI101A AI project.

Course Name: COSI101A Artificial Intelligence

Professor: Pengyu Hong

Institution: Brandeis University

Chapter 2

Useful Resources

2.1 Resources on Theories

Math supplemental notes

Stanford Machine Learning math notes

http://cs229.stanford.edu/materials.html

Highlights:

(pdf) Linear Algebra Review and Reference

(pdf) Probability Theory Review

Textbooks

Course Textbook

Artificial Intelligence: A Modern Approach (3rd Edition)

Further readings:

ISLR: An Introduction to Statistical Learning with Applications in R

http://www-bcf.usc.edu/~gareth/ISL/

ESL: The Elements of Statistical Learning: Data Mining, Inference, and Prediction. Second Edition

http://statweb.stanford.edu/~tibs/ElemStatLearn/

MOOC websites

In companion with ISLR:

https://www.r-bloggers.com/in-depth-introduction-to-machine-learning-in-15-hours-of-expert-videos/

Coursera Stanford Machine Learning

https://www.coursera.org/learn/machine-learning/home/welcome

CMU Data Mining

http://www.stat.cmu.edu/~ryantibs/datamining/

Others

Visual Information Theory

http://colah.github.io/posts/2015-09-Visual-Information/

2.2 Resources on Coding

Project Kaggle page

https://www.kaggle.com/c/two-sigma-connect-rental-listing-inquiries

bookdown

The package that builds this website.

https://bookdown.org/yihui/bookdown/

prism.js

Alternative highlight javascript

http://prismjs.com/#basic-usage

2.2.1 R Resources

Official Manuals

https://cran.r-project.org/manuals.html

R Introduction

(pdf) R Intro

Data Visualization in R with ggplot2

http://varianceexplained.org/RData/code/code_lesson2/

ggplot2 Documentation

http://docs.ggplot2.org/current/

Plotting NYC Map

https://www.kaggle.com/enrique1500/two-sigma-connect-rental-listing-inquiries/rental-listing-ny-map

TensorFlow in R

https://rstudio.github.io/tensorflow/index.html

MNIST For ML Beginners (Softmax Regression)

https://rstudio.github.io/tensorflow/tutorial_mnist_beginners.html

Deep MNIST for Experts (Convolutional Neural Network)

https://rstudio.github.io/tensorflow/tutorial_mnist_pros.html

https://rstudio.github.io/tensorflow/tutorial_mnist_pros.html

2.2.2 Python Resources

PyCharm: A Python IDE

https://www.jetbrains.com/pycharm/

TensorFlow in Python

https://www.tensorflow.org/